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# “HOW TO DO IT” SERIES

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*Amateur Movies  
and how to make them*



# How to do it" Series

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Readers will find number 8 in this series, Ansel Adams' *Making a Photograph*, of special value, and are also recommended to consult the annual issues of *Modern Photography*. *Movie Parade*, by Paul Rotha, a review of the development of the moving picture from its beginnings to the present day, with 600 reproductions from stills, will be found a useful work of reference.

*“HOW TO DO IT” SERIES*

**AMATEUR  
MOVIES &  
HOW TO MAKE THEM**

**Alex Strasser**

1937

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*The diagrams in the text were  
specially drawn by Mr. Henry Rox*

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# I.

# Introduction

The only adequate way in which filming can be described is by saying that it is one of the most peculiar—not to say capricious—hobbies that anyone can take up, and that we can find either intense enjoyment or intense annoyance in making films. Which of the two we actually experience depends entirely on our own attitude towards the subject “Film.”

The position may be clarified by comparing filming with something rather more familiar to the reader. If a man who has just passed the driving test were to buy his first car and start touring abroad with no mechanical knowledge, no proper maps, and no information about foreign regulations, yet could not speak the languages used abroad, he would certainly be plagued with a succession of breakdowns and other calamities, and would find himself eventually stranded in some forgotten corner of Europe, heartily wishing he had never gone in for motoring. But if he had taken some trouble beforehand to find out the difficulties ahead, his experience would have been infinitely more enjoyable.

Things are very much the same when it comes to films, for the various aspects of the work lie in different fields of human experience and knowledge. These various aspects run parallel throughout the making of the film, and are almost independent until they unite finally to form a successful result. In the professional studios, these varied aspects are dealt with by experts, but nobody can reasonably expect an

amateur to have an equally firm grasp of all of them. What the amateur *can* and *should* do, though, is the following.

1. He can first find out something about the technical side of cinematography.

2. Then make himself familiar with the art-principles of film work and—

3. Finally he can choose one or two special fields in which his personal tastes and talents may appear at their best, so that his productions will not look like “another amateur effort,” but will have something of his own personality in them.

Most amateurs who are exasperated with their own films have failed to recognise the importance of these three points. Like our traveller, they started off before they were ready to go, and naturally lost their bearings immediately. But even this should cause them to blame themselves (which they do not do) instead of blaming the hobby (which they do).

This book consequently aims at making clear the points which must be known before a successful film can be made. A concise survey will be made of the fields concerned, and the essential technical and æsthetic questions will be illustrated by diagrams, sketches and photographs. There will be nothing that a beginner cannot understand, yet even the advanced amateur may find profit here—particularly in the sense of finding new possibilities for his work. The guiding principle throughout is that of helping the amateur to *enjoy* making his own films.

## 2.

# The Technical Side

### A. Necessary Equipment.

1. **The Three Substandard Film Sizes.** The vast majority of amateurs use one of the three "substandard" films, either 16 mm., 9.5 mm. or 8 mm. wide.

All these sizes give excellent results, though 16 mm. film offers rather more possibilities than the others. In this size there is a very wide choice of equipment, from cheap and simple cameras to expensive instruments with all the refinements of the professional camera (e.g., Ciné Kodak Special or Bell & Howell Filmo 70 D). In certain other matters, too, 16 mm. film is pre-eminent, and those whose work is likely to be at all ambitious—including camera tricks, post-synchronising with music, or projection before large audiences (as with instructional films and the like)—should unquestionably choose this largest size of substandard film.

For the everyday work of most amateurs, however, in which the film is only screened in the family circle, the 9.5 mm. and 8 mm. sizes are extremely satisfactory, while their cost compared with that of

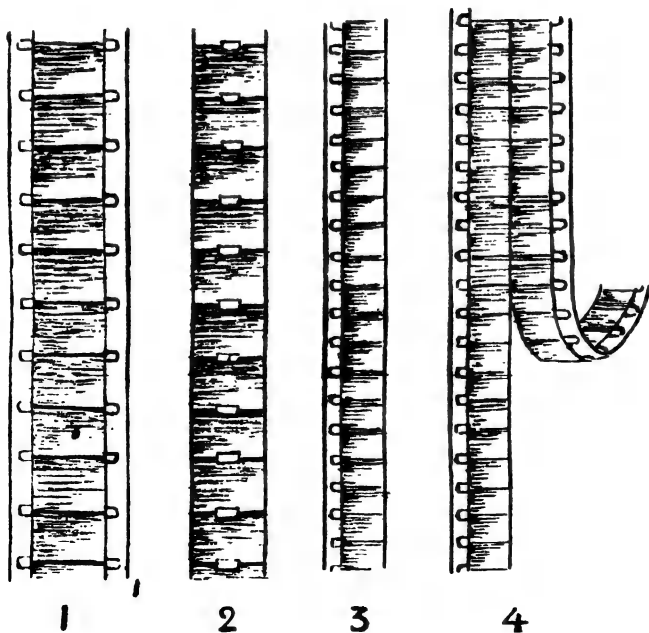


Fig. 1. This drawing shows the relation between the various sizes of film. All are in their natural size.

1. 16 mm. film.
2. 9.5 mm. film.
3. 8 mm. film (Straight-8).
4. 8 mm. film (Kodak-8).

(In 8 mm. film of "Kodak-8" type, the spool of film is run twice through the camera to expose both halves of the strip. After processing, the film is split longitudinally and joined together to give a single strip of double the length.)

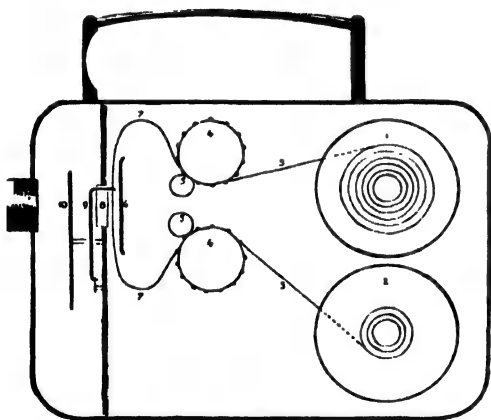


16 mm. film is between one-half and two-thirds. The same fractional relation is approximately true of the size and weight of the camera, projector and other equipment.

A number of firms (e.g., Kodak, Pathé, etc.) have libraries of films in 16 mm., 8 mm. and 9.5 mm., so that anyone can either hire or buy films to help out his own efforts when giving a film show.

2. The Camera. The amateur's camera is the most important part of his equipment—much more so relatively than that of the professional, whose stories, settings, and music can often rival the actual photography. The amateur must thus be as confident in the use of the camera as he can possibly be, and he should be able to control it just as accurately as his golf club or cricket bat.

Film cameras are made in the most varied of sizes, designs, and models, but all of them depend on a single mechanical principle. The diagram below shows the layout of the normal camera, and full directions for the particular type purchased will be found in the instruction book supplied with it. Every amateur should read this booklet and practice all it says on the camera until he can go through the



**Fig. 2. A Movie Camera**

1. Feed spool, full of unexposed film.
2. Take-up spool, winding on the exposed film.
3. Film.
- 4 and 5. Sprockets, which guide the film correctly to the gate.
6. The pressure pad, which holds the film firmly in the gate during exposure.
7. The two loops. The correct size of these is important. (See camera instruction book.)
8. The gate, in which the film is exposed.
9. The claw, which engages in the perforations of the film and draws it past the gate, one picture at a time. Normally 16 pictures are pulled through the gate each second, but many cameras have devices giving variable film speeds (e.g., 4, 8, 16, 32 and 64 pictures a second). These devices are handy to get full exposure in very bad light, or where a "slow-motion" effect is required.
10. Rotating shutter with sector cut out of it. This shutter covers the film while it is moving forward to the next picture, but exposes it while it is stationary in the film gate.

motions in his sleep, for only in this way can he really learn to know his camera inside-out and thus get the finest results from it.

A strong tripod with panning head should be included in the outfit. It is essential for certain types of shot—notably long panorama exposures and practically every kind of trick work.

3. **The Lens.** A first-class lens of as large an aperture as can be afforded, and which gives a really sharp image, is absolutely essential for all “quality” film work. The large aperture is desirable as it is not always possible to work in bright sunshine, and unless the image is really sharp, no true details will appear in the picture.

The sharpness of the image depends on the optical quality of the lens, and the lens speed on its maximum aperture. Both of these desirable qualities are naturally a matter of price, and where lenses of varying types are offered with any particular camera it is usually best not to choose the very cheapest one of the range. The “aperture numbers” of lenses are determined at the factory and are engraved round the mount (e.g.,  $f/2$ ,  $f/5.6$ —or simply “2,” “5.6”), but it must always be remembered that a *smaller* number means a *larger* aperture. An “iris diaphragm” is fitted to all lenses, for it is clearly not desirable to use them at full aperture the whole time. One may reduce the aperture either to weaken the light reaching the film and thus cut down the exposure given, or else because of focusing difficulties (for which see later chapter).

When choosing a suitable lens (and with many cheaper cameras no choice is possible, for the lens is rigidly attached to the body), one should select a type with a full aperture of not less than  $f/3.5$ , though it is always better to have one of  $f/2.8$  or even  $f/2$  if the extra price can be paid. All the same, there are plenty of times when a single lens is insufficient, for the normal “standard” lens of the film camera has a comparatively short focal length, and covers an angle of about 40 deg.—a considerable area in front of the camera. With this lens, a pigeon will fill the picture when four feet away, and the camera need only be twenty feet from a person to include him full length. There are many occasions, though, where it is undesirable or impossible to approach given subjects so close, though they should appear as large as possible on the screen. In these cases a lens should be used which covers a smaller angle of field, and has a correspondingly longer focus. These “long-focus” lenses, as they are called, have angles of field of 20 deg.

The reality.



Taken with a standard lens.



Taken with a long focus lens.



Fig. 3. The use of the long-focus lens.

to 25 deg., and only include about half the area shown by the standard lens at a given camera distance, so that everything appears twice the size on the screen. (See diagram above and Plate I.)

Long-focus lenses are extremely valuable in ordinary film work, and on many occasions are indispensable. Open landscapes, mountain scenery, and cruising shots all involve distant objects (buildings, mountain peaks, ships, etc). and the long-focus lens magnifies them satisfactorily. In sporting events, or when public ceremonies are being filmed, they show persons at a considerable distance apparently near the camera, while animals in the Zoo or on their native heath can often only be filmed satisfactorily with them. Even for perfectly ordinary objects, such as a child's hand or a small household pet, the long-focus lens often gives a much more satisfactory result.

Those who are able to afford a second lens should thus choose an extra one about twice the focal length of the "standard," and with a full aperture of  $f/3.5$  or  $f/4.5$ . For a really comprehensive outfit a third lens of the true "telephoto" type may be included. These lenses have angles of field of 15 deg. or even less, and are specially handy for filming climbers on distant mountain peaks or animals in their natural surroundings. A special "speed" lens of normal focus, but with a full aperture of  $f/1.5$ , is valuable for work in very poor light, or for taking films in the streets at night.

A lens hood, which protects the glasses of the lens from the direct rays of the light source, is an essential part of the equipment, and if it



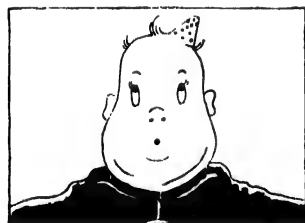
PLATE I. The same subject taken with a standard (above) and a long-focus lens (below).

is not provided with the camera or lens as bought, it should be purchased specially.

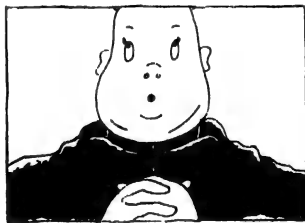
*Exposure.* One of the most important things about good results is that correct exposure must be given, particularly with reversal and colour films. Exposures should never be guessed: even the cheapest exposure table (which is sometimes provided on the back of the camera, or can at least be bought for a few pence at a shop) is better than nothing, and there are many good exposure meters on the market. A recent development is that of high-light exposures, which uses a special type of meter and is claimed gives perfect results.

*Special Effects.* Sometimes it is desirable that the image should not be needle-sharp, because it gives a better "effect" when the outlines are softened. (See Plate II, upper picture.) This effect is called "soft-focus," and it can be got quite simply by placing a piece of fine-mesh black or white gauze in front of the lens during the exposure. (The gauze is best stretched on a filter holder.) This effect is specially valuable where a face would normally show too hard a contrast and too sharp an outline: taken through the gauze it is pleasantly softened.

Occasionally it is useful to be able to produce a blurred image like a reflection from a sheet of water (Plate II, lower picture), as—for example—where the impressions of a drunken man are to be shown.



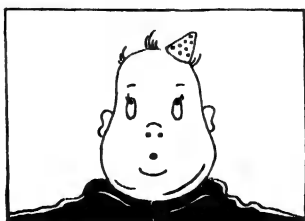
a.



b.



c.



d.

Fig. 4. *Special note regarding "parallax"* (an apparent change in the position of an object caused by change of position in the observer).

When a close-up of a person is being taken with the camera near to him, the image seen through the view-finder does not always agree with what will appear on the film. When the head is correctly placed in the finder (a), the picture on the film will appear to have moved upwards (b). The finder should thus be arranged to have the image a little too low (c), and then the picture in the camera will be correct (d).



PLATE II. Effects with the lens. Top : soft-focus effect, produced by stretching white gauze in front of the lens. Bottom : blurred image, produced by rubbing a thin film of vaseline on the glass of the lens.

Here the surface of the lens can be smeared with a very thin film of grease, such as vaseline, which produces the correct effect when rubbed into lines.

4. **Films and Filters.** The question of the kind of film to use has become a very simple one in the last few years. Reversal films are ordinarily preferred by amateurs to negative-positive films, and the choice to-day is really between a panchromatic monochrome film and a colour film.

The reversal process is in many ways specially suited to amateur work. The professionals prefer a negative-positive type, since they have to make a large number of prints, but the amateur is not usually likely to need a great number of copies of his films, and in any case a reversal film can be copied several times, though at a slightly greater cost. After the reversal film has been exposed, it is developed to a negative image, and then passed through a succession of baths which remove the negative image and form a positive one in its place. Thus only one film is needed against the two of a negative-positive process.

As far as the sensitivity of the emulsion on the film is concerned, the present-day types are almost exclusively panchromatic in character, and the difference between them is largely one of effective "speed" in the camera. The expression panchromatic means that the films are sensitive to all visible colours, and record the colours of natural objects as appropriate shades of black, white and grey. Earlier types of films were less satisfactory, since they were far too sensitive to blue, somewhat sensitive to green and yellow, and not sensitive at all (or very little indeed) to red. The black and white image they gave was thus false in tone values, for light yellow hair appeared as black or dark grey on the screen, while blue eyes appeared white and "watery" in appearance. Since the white clouds in the sky affected the film in almost the same way as the blue sky itself, they seldom appeared in the picture at all, and the sky was a white blank. A panchromatic film, however, renders colours in very much the same tones as our eyes see them, which is very necessary in view of the fact that we want a natural picture on the screen.

Even panchromatic films, though, are not quite perfect in this respect. They are still over-sensitive to blue, so that blue objects always appear rather too light, while certain other colours do not appear as bright as they would to the eye. These difficulties can be got over by the

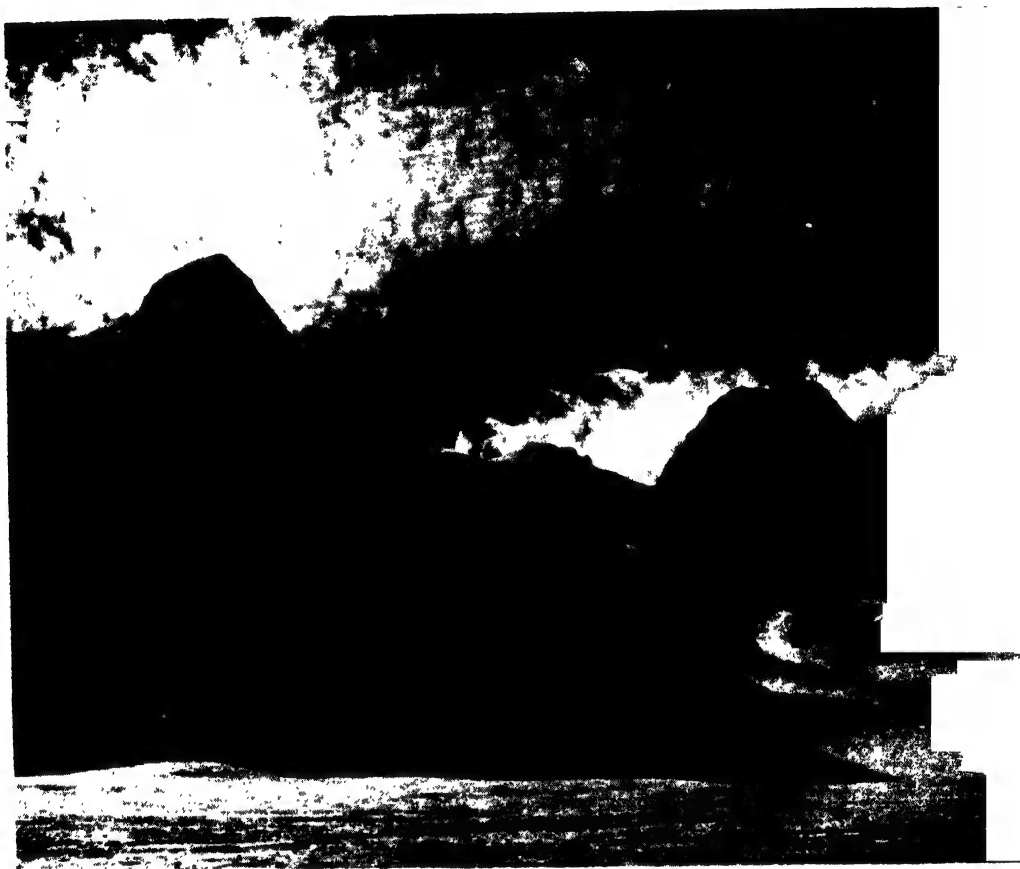


PLATE III. The use of a deep yellow filter gives a dramatic cloud effect.



use of filters, but since the action of a filter requires a good deal of scientific explanation it will be enough here to note the occasions on which the use of a filter is desirable.

A *light yellow* filter is necessary for correct colour rendering in all landscape work, particularly for clouds in a blue sky. It is preferably used for portraits, especially where the subject is fair—with light hair and blue eyes—and where freckles are to be toned down.

A *light green* filter is often valuable where strongly coloured objects must be correctly rendered.

A *deep yellow* filter is usually only required for dramatic cloud effects (see Plate III) or where it is desired to “cut through” a light mist and show the distance as if no mist were present.

*Red* filters can be used here and there for fake night exposures taken during the day. For this purpose a bright sun throwing heavy shadows and a deep blue sky are required, and the result will be very similar to moonlight.

No filters need be used in artificial light, or where shots are taken at altitudes of more than 6,000 feet, since the composition of the light under these circumstances is quite different from that ruling on normal occasions.

Practically every kind of filter, light in colour though it may be, absorbs some of the light passing through it to the lens, and the exposure must consequently be increased. The extra exposure necessary is shown in instructions issued by the manufacturers, and they must be followed carefully. If this point is not kept in mind, the pictures are liable to appear somewhat under-exposed. (Note also that a filter made by one firm should not strictly be used on film made by another, for each firm matches its filters to its own films.)

Panchromatic films are usually made in two speeds: normal speed and super-speed. The first is quite fast enough for all normal purposes and it is only for work in artificial light, night work in the streets, and very dull weather in daylight, that the faster type is necessary. Since there is always a tendency for a faster film to show rather more “grain” on the screen than a normal speed one, it is naturally best to use the slower type whenever possible.

Colour films are dealt with separately later on.

## B. The Actual Shooting.

1. **Focusing and Depth of Focus.** Every lens is set in the first place to focus on "infinity," which means that objects at an infinite distance from the camera are sharp. For nearer objects the lens "focus" must be altered, and a special ring is provided on the mount with a mark and a scale of distances. The mark is set opposite the number on the scale indicating the distance in feet between camera and subject, and everything at that distance will be sharply defined.

Mathematically, it is only objects *exactly* at the distance focused which will be sharp, and at all other distances they will be more or less blurred. But since our eyes cannot perceive a small amount of blur, it follows that objects rather nearer the camera and rather farther away will also appear to us to be sharply defined in the picture. The limited region within which all objects appear to be sharp is called the "depth of focus," and is highly important, though with a film camera it is fortunately not difficult to deal with. The drawing below shows the main points quite clearly.

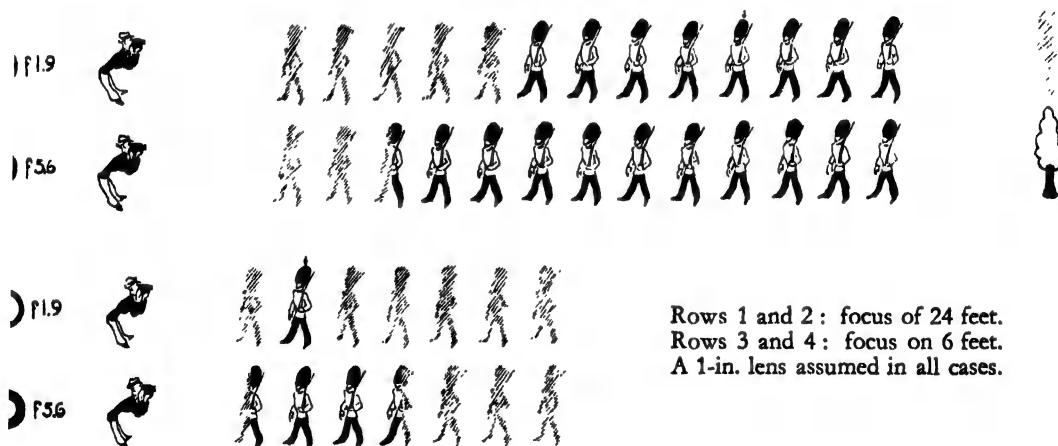


Fig. 5. Focusing and depth of focus. (a) The larger the lens aperture, the smaller the depth of focus. (Compare row 1 with row 2, and row 3 with row 4.) (b) The depth of focus is larger when the lens is focused on a distant object than when it is focused for a near object, assuming that the aperture remains the same. (Compare rows 1 and 2 with rows 3 and 4.) (c) The depth of focus is always larger on the side farther from the camera than on the side nearer to the camera. (Compare row 3 with row 4.)

From these three general rules, the first thing that is obvious is that the *larger* the depth of focus required, the *smaller* must the lens aperture be. (See Plate IV, upper picture.)

Row 2 of Fig. 5 shows a very useful setting for the normal 1 inch lens of the 16 mm. camera. Focus on 24 feet, and with a lens aperture of  $f/5.6$  everything between 9 feet and infinity is sharp.

Other examples :

Focusing on 8 feet and using  $f/11$  gives a depth of focus between 4 feet and infinity. (This is only possible in summer sunlight, of course.)

For close ups and mid-shots, another setting is preferable : focus on 6 feet and use  $f/8$ . The depth of focus then ranges between 4 and 14 feet.

The second rule is the converse of the first : the *less* depth of focus is wanted, the *larger* the lens aperture can be. (See Plate IV, lower picture.) This is specially useful in dull weather and poor light.

When shooting a single object, it is better to focus on a point rather nearer the camera than the centre of the object. Thus a tree is better focused on the middle of the branches nearest the camera than on the trunk, while a face is preferably focused on the eyes rather than the ears.

The above notes for depth of focus refer only to the 1 inch lens used normally on a 16 mm. camera. If other lenses are used, the makers' tables should be consulted.

Cheaper types of camera (particularly in 9.5 mm. and 8 mm. sizes) are often fitted with "fixed-focus" lenses, which need no attention, since their depth of focus is so great that it normally stretches from infinity to a few feet from the camera. With this type of lens, of course, no focusing whatever is required.

#### Plate IV (opposite). Depth of focus.

Top : the larger the depth of focus required, the smaller the lens aperture must be.

Bottom : the less depth of focus needed, the larger the aperture must be.



2. **Light and Lighting.** The condition of the light when a film is exposed is clearly a very important matter, and before shooting the three following essentials should be considered :

1. The quantity of light present.
2. The type of light ruling, and
3. The position of the camera and subject relative to the light.

The *quantity* of light is measured—as noted before—by the exposure meter, so that this point involves little difficulty.

The *type* of light ruling is another matter. It depends on the spectral and physical composition of the light, and can vary very greatly. *Hard* light contains much ultra-violet radiation and is primarily found during midday, or on sea beaches, in high mountains, and in southern countries. (See Plate V, upper picture.) The characteristics of this type of light are heavy shadows devoid of detail and brilliant chalky high-lights, so that it is usually avoided by photographers like the plague.

*Soft* light contains large quantities of yellow and red rays, so it is primarily found in the early morning, late afternoon, and in all kinds of half-watt light.

*Diffused* light is found when the direct rays of the sun or the lamp are scattered by clouds, atmospheric mist or—in artificial light—layers of gauze cloth. (See Plate V, lower picture.)

In the great majority of cases the last two types of light are those which are most useful for film work, particularly where human beings are the subjects of the picture.

The *position of camera and subject* relative to the light depends primarily on the effect that it is desired to get. If the light comes from directly behind the camera and falls evenly on a landscape or other subject, we call it “front light.” Except for colour films, this type of lighting is not very satisfactory, since it shows a flat effect, without adequate shadows and perspective.

It is often possible to expose right against the light, provided that

**Plate V (opposite). Lighting conditions out of doors.**

Top : hard light. Bottom : diffused light (sun behind clouds).



care is taken to ensure that the light does not strike the glasses of the lens. In many cases the most attractive silhouettes, shadows, and brilliant reflections result, so that this type of lighting is particularly satisfactory for sea beaches, sheets of water or ice, and for winter landscapes shrouded in snow. Back-lighting, too, is a very valuable way out of the difficulties of hard light, for it converts an unsatisfactory effect into a useful—and often highly effective—picture. (See Fig. 6, *c*, and Plate VIII.)

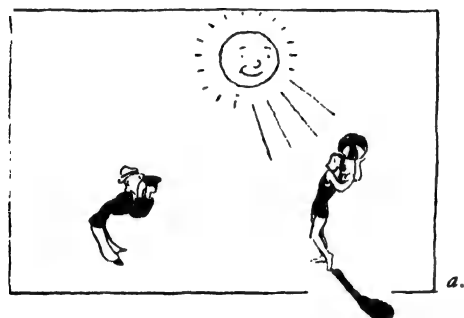
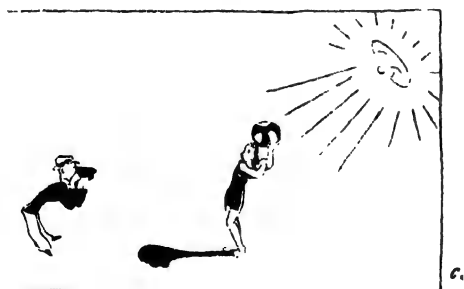
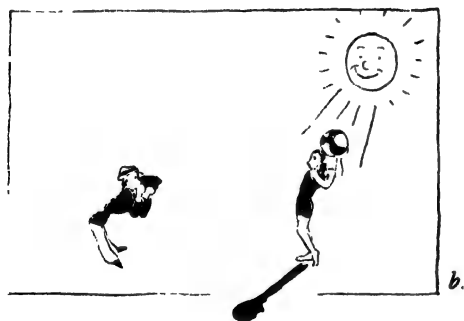


Fig. 6. The positions of the sun and camera.



It is far better to have the sun or lamp at the side of the camera and subject in such a way that the illumination reaches the subject obliquely from the front or the back. In these cases “modelling” is produced on the subject itself, whether it is a face, a building, or a landscape, for the shadows which are produced separate the various parts of the picture from one another and an impression of perspective and form is obtained. (See *a* and *b*, and Plate VI.)



PLATE VI. The Position of the Sun. Top : front-and-side lighting. Bottom : back-and-side lighting.



2a. **Interiors.** If artificial light is not available, indoor shots can be taken in rooms with one or two large windows when the sun is shining strongly outside. The subject should either be placed so that the light from the window(s) falls sideways on it, or else so that it is directly in front of the window. (See Plate VII, lower picture.) In both cases, the side of the subject farthest from the window must be lightened by the use of reflectors, which throw the window light back on to the darkest portions. Such reflectors are easily made of a simple white cloth, a large mirror, or a piece of plywood three feet square, covered with silver paper.

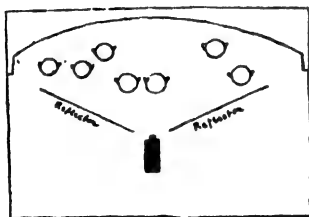


Fig. 7. This diagram shows the arrangement of the camera, etc., for the upper picture of Plate VII.

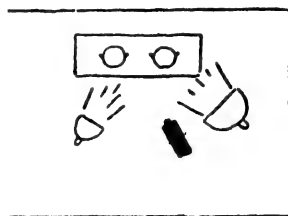


Fig. 8. This diagram shows the lighting arrangement for the lower picture of Plate VII.

In bad weather, or during the evening, artificial light must naturally be used. With super-speed panchromatic film and an aperture of  $f/2$  to  $f/3.5$ , portraits can be filmed with a single lamp of the Nitraphot or Kodaflector type, though these lamps must be mounted in a suitable reflector. For groups or small scenes a number of lamps must naturally be used, in which case the normal lights in the room should be turned on as well, and a table lamp used to lighten the shadows.\*

Daylight and artificial light can naturally be combined. In such cases the light coming through a window provides the general lighting, while the artificial light is placed to give what is usually called "effect lighting."

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\*Kodak publish a small booklet full of very useful data regarding exposures, apertures, etc., when using their Kodaflector lamps, and this may be obtained free on application.



PLATE VII. Lighting indoors. Top : daylight, reflected by white sheets on the children.  
Bottom : artificial light. (See lighting diagrams on opposite page.)

### 3. The Handling of the Camera. Certain things should always be done at the right time as far as the camera is concerned. The most important are the following :

*When Loading.*—Always remove dust from the inside of the camera with a small dry paint-brush.

Load the camera carefully, giving particular attention to the size of the loops, and run the camera before closing the lid to make sure that the film is going through the gate correctly.

*Before Exposure.*—Find the correct exposure.

Measure or estimate the distance of the subject from the camera (quickest done with a distance meter), and focus the lens, bearing the question of depth of focus in mind.

Judge whether a lens hood or filter is necessary.

Set the lens aperture to the correct value.

Finally, take a rapid look through the view-finder (*not* a hasty look) and choose the best composition of the picture before pressing the camera release.

*During Exposure.*—Hold the camera still: never tilt it carelessly or wave it about. Spread the feet and slightly bend your knees when it is necessary to follow a moving object by swinging the camera. (Rapidly moving objects such as trains, cars, ski-ers, etc., are best taken obliquely from the front at a small angle to their direction of movement.) To shoot such objects moving directly across the camera is usually a waste of film, for nothing appears on the screen but a fast-moving blurred shadow.

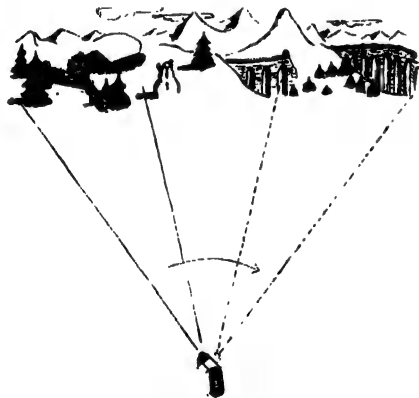


Fig. 9. Panning. (*Pan-orama* shots). Move the camera slowly and evenly in the required direction. A swing round through  $45^{\circ}$  should not take *less* than fifteen seconds.

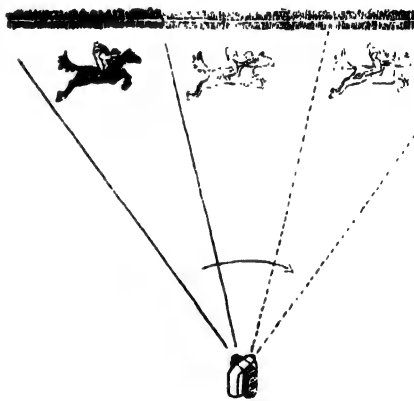


Fig. 10. Following Moving Objects. To keep the moving object as central as possible in the view-finder, swing the camera gently and evenly (without a jerk) as it moves forward.

In both the above cases stop the movement of the camera sharply but accurately: never allow it to wobble to a stop.

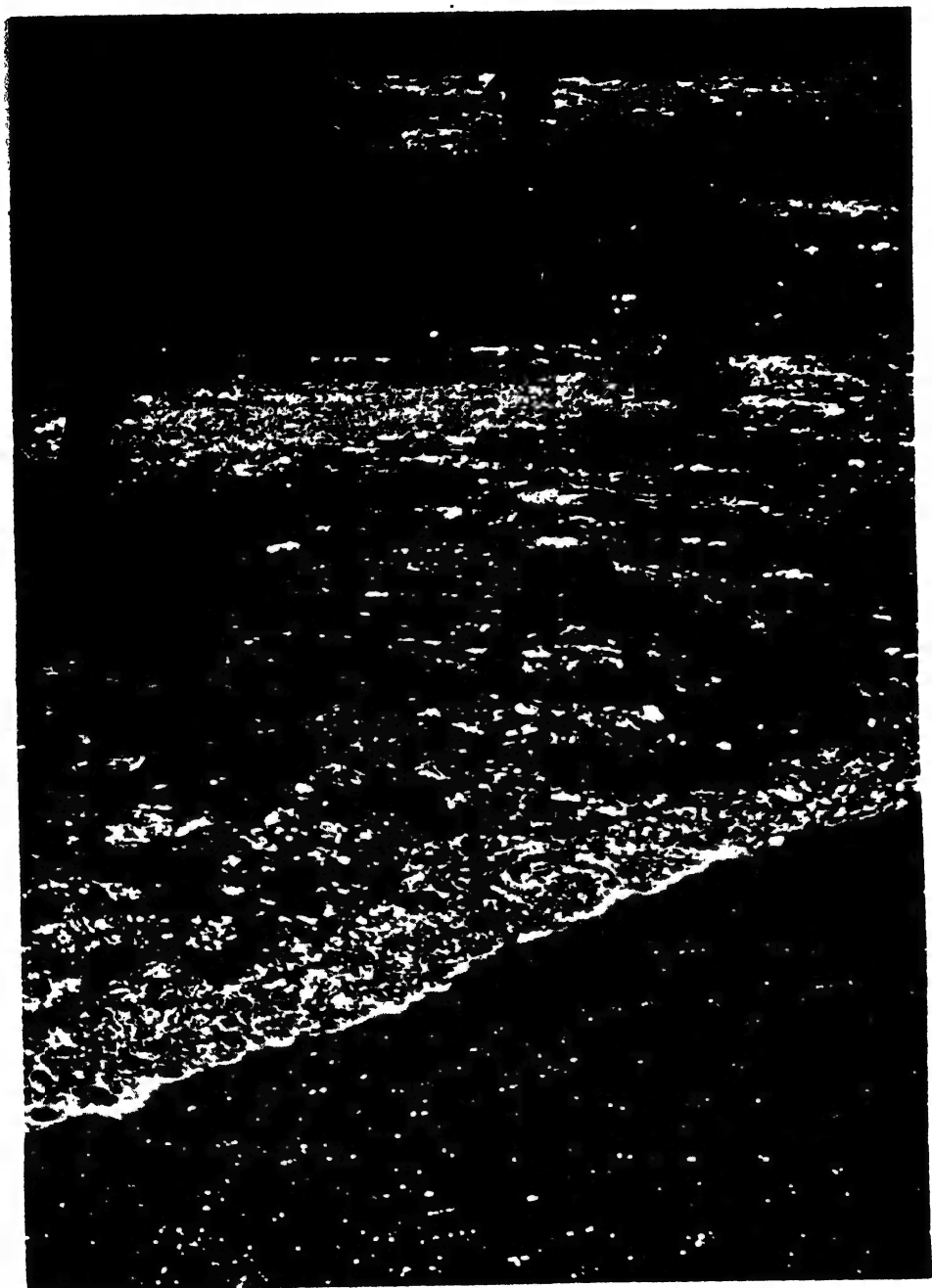


PLATE VIII. The Position of the Sun (2). Picture taken against the light, or in 'back-light.'

4. **Camera Tricks.** All kinds of exciting tricks can be played with a film camera, some of them essential to film particular shots properly, and most of them extremely amusing in effect. The simplest ones include the following :

*The camera on its head.* If the camera is held upside down while filming so that it stands on its head, all the pictures will be upside down. But if that part of the film is turned round the right way for projecting everything will move backwards instead of forwards. Vehicles and human beings will travel backwards ; smoke will not be puffed out by the smoker, but will be sucked in from the air ; a diver comes backwards out of the water and rises to the high board, and so on. This simple trick can give the most amusing effects on the screen.

*Double exposures.* Not quite so simple to produce are ghosts and double images generally. Suppose that someone has to go to sleep in the garden, and then his "dream-self" is to get up and leave his body. The second figure must, of course, be transparent, since it is unreal. The person concerned is told to lie down on the grass on a dark rug, and the camera set up on a tripod. Having carefully noted the footage indicator, the exposure is made. Then the camera is either taken into the dark-room, and the length of film which has been exposed re-wound on to the top feed spool, or else (where the camera will wind backwards) the whole mechanism turned backwards (the lens being capped to stop fogging) until the original value is reached on the footage indicator. The scene is then shot again, but this time the sleeping person gets up and walks out of the picture. On the screen, the image in which the person remains on the rug will be normal, since it is taken against a dark background, while the second will be transparent. In this trick, of course, it is essential that the camera does not move between the two exposures, or the background will be blurred and may show double images too. The person on the rug, too, must not move while the first exposure is being made or while the camera is being turned back.

*Duplicating a single person.* This is a similar trick to the foregoing, and also depends on double exposure. If someone is to have a conversation with himself, the two exposures are made as above, but the background must be black (black velvet is best) and the person must be in light clothes for the best effect. These precautions will ensure that neither of the images appears to be transparent. (See Plate IX.)

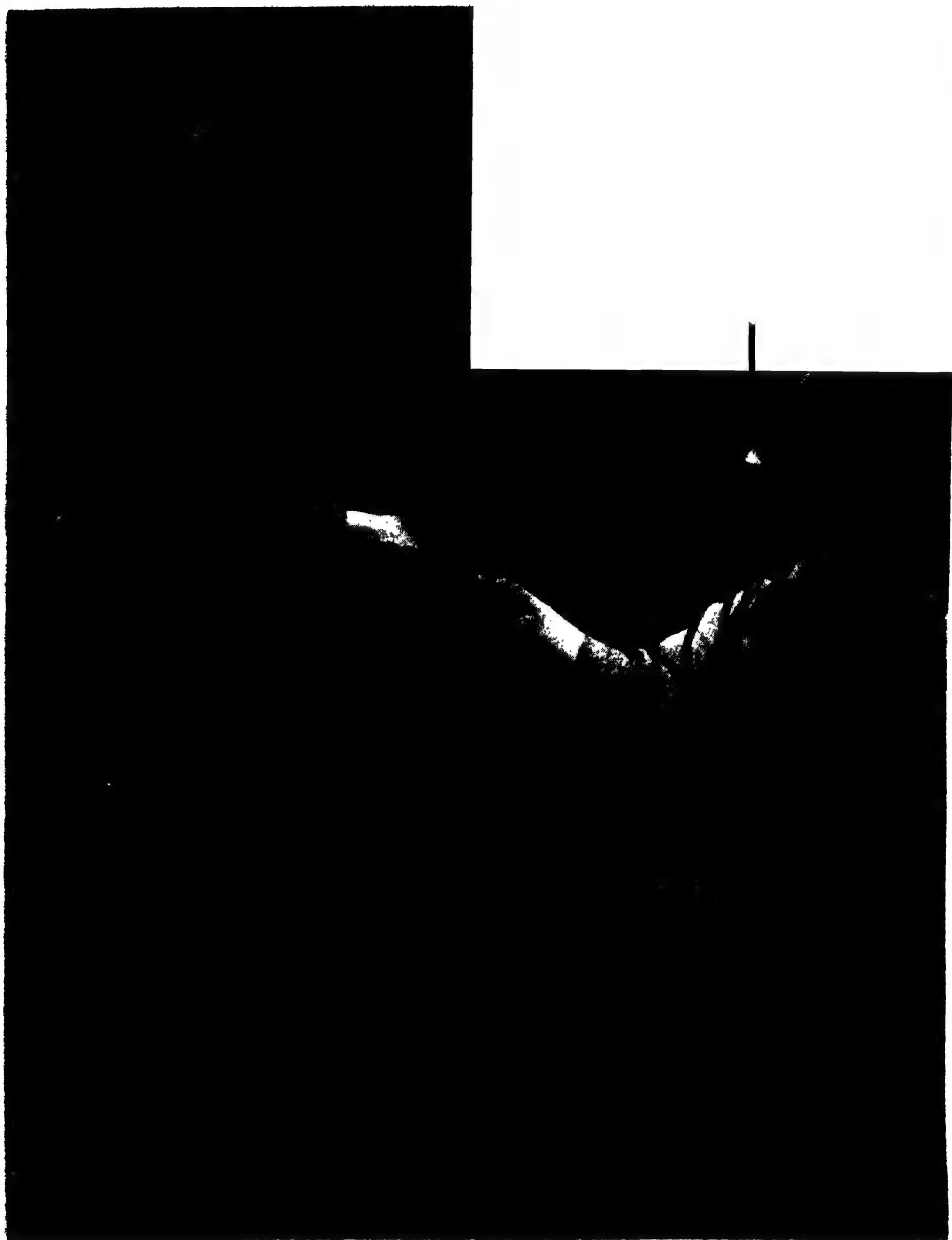


PLATE IX. The Duplication of a single person. Double exposure against a black background.

### 3.

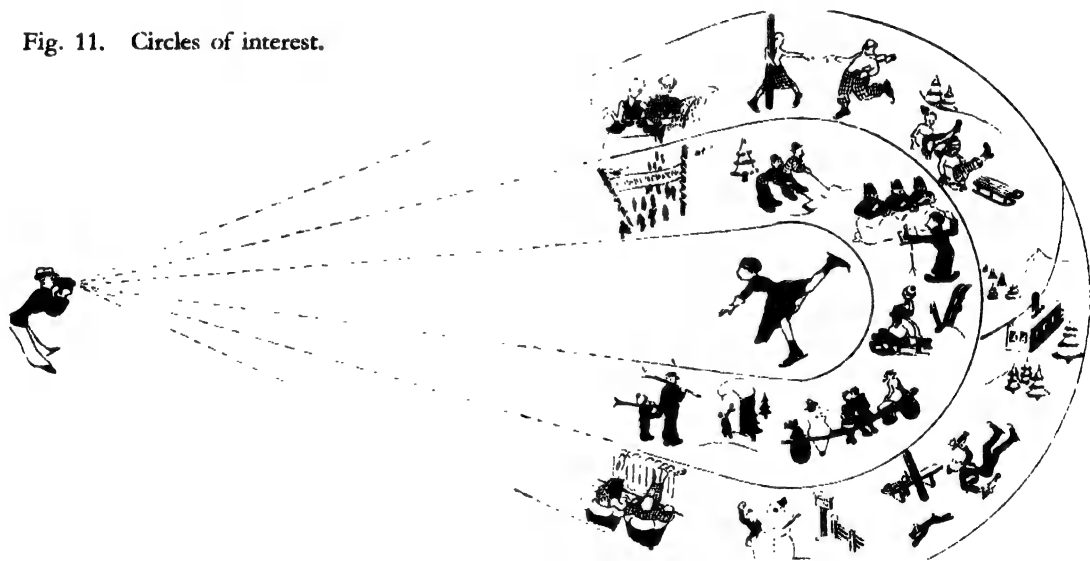
## The Artistic Side

### A. Organised Film Making.

Shooting scenes in a purely haphazard way is really nothing but a waste of time and money : all that results is a quantity of disconnected shots in which neither the family nor our friends can find really great interest. With just a little planning before the film is taken, the effect can be enormously improved, and as soon as the beginner's first experiments with the camera are over, one should try to make small but complete films which "hang together" really properly, or even tell a little story.

An example will make this clearer. Supposing that when at the winter sports in Switzerland an important skating contest is being held. Here—as shown by the drawing below—there are three different

Fig. 11. Circles of interest.



"circles" of interest (though they are all connected to one another) which are suitable for filming.

The central point is naturally the contest itself, composed of the

competitors who are taking part. Shots of these must clearly be taken at the time of the contest, for this particular event only happens once.

Secondly, there are the *surroundings* in which the contest is staged: the people streaming into the ground, the band, the judges, and the crowds in the enclosures. These must also be included if the film is to be interesting, for without them it would hardly be possible to create a life-like impression of the occasion. Many of the necessary shots will also have to be made at the contest itself, but a whole series of them can be taken either before or after it, or even at a different place. Such 'atmospheric' shots can then be put into the film to improve it.

Finally, there is the matter of the *personal* part played by the amateur in the contest. The journey to the ground must be shown, perhaps by sledge, or cable-railway, while the quality of the expert's skating can be compared with that shown by the amateur himself. A small episode, such as a waiter bringing a hot drink, and taking a toss into the snow with his tray, would enliven the proceedings, and finally, there could be shown the goodbye to friends, the journey home, and the thawing of frozen feet and legs on the radiator.

Most of these shots comprising the third, personal, section can be taken at any time during the holiday, quite apart from where or when they were actually filmed. But it is necessary that they should be thought out beforehand and written down so that nothing is forgotten, and that they should be suitably arranged. Finally, some little action (e.g., the waiter) must be staged and filmed satisfactorily.

If things are done in the above manner—and in many cases it will be possible to plan beforehand like this—the resulting film will not only be a sort of a personal 'moving chronicle' of our holiday, but something of really general interest to everyone who sees it.



## B. Creating the 'reality' of the film.

The fundamental rule of film making—so far as our own purposes are concerned—can be summed up in a single sentence: if a film is to seem really natural on the screen, it must depart entirely from natural time and space. Real time in years, months, days, hours and even minutes, is condensed into film time, and space as our eyes perceive it is transmuted into film space.

*'Film Time.'* In real life (and with no traffic blocks) a car takes about ten minutes to get from the Marble Arch to the Stock Exchange. On the film this journey would last some ten seconds as a rule, for the entire journey would never be shown, one just sees the car, taken from a different angle each time, passing a number of landmarks on the route. The concentration of time is accomplished in this case by the *frequent change of scene*. A second example is shown in Plate XI.

*'Film Space.'* A person in a film drops a penny, then bends down and picks it up—i.e., a close-up appears of the hand with the penny in it. This hand may be the hand of anyone in the world, but it is at once taken to be that of the person just shown. Two or more people or objects can thus be conveniently fused into a single film person or object by suitable close-up work. Another example is shown in Plate XII.

*The use of the close-up.* From the above examples it will be realised that the frequent change of camera position and equally frequent use of the close-up is not done from virtuosity, but because it is unavoidable as a means of creating film space and time from their actual counterparts. The close-up incidentally fulfills a number of other useful purposes. It hurries forward the movement of the film processes by bringing the attention of the audience without any effort on their part to important objects or portions of the action (i.e., by showing them large in size and increasing their importance); it enables scenic changes of all kinds to be made; it fills up gaps in the continuity of the film (see page 74), and it makes it possible to introduce during the cutting of the film a whole series of scenes taken from 'stock shots,' so that the whole film can be welded together into an organic whole.

It is consequently extremely necessary that plenty of close-ups should be available when cutting the film, and it is advisable to take some feet of 'spare' close-ups in every sequence. This quite apart from using the close-up frequently in the plan of the film. (See Plate X.)



PLATE X. Creating the ' reality ' of the Film. Long-shot : Mid-shot : Close-up.



PLATE XI. Creating 'Film Time.'



Any process whatever which lasts a considerable time in real life can be reduced in the film, by close-ups, to a few seconds, without appearing unnaturally hurried on the screen.

PLATE XII. Creating 'Film Space.'



A scene on the Riviera. If one or two shots which have been taken of a garden in the south of France at any time are put at the beginning of the scene, the rest of the action can be filmed elsewhere so long as the surroundings are reasonably suitable, and will be assumed to have been taken on the Riviera. Close-ups are safest here, of course!



## C. The Actual Picture and its Effect.

1. **Camera Angles.** It was stated earlier on in this book that the camera should not be tilted during filming. This means that vertical and horizontal objects in real life should also appear vertical and horizontal on the screen.

There are exceptions, however, to this rule. When a particular effect is wanted, the normal appearance of an object is often nothing like dramatic enough. A locomotive at the front of an express must look gigantic in size as it rushes at the camera ; a crane must appear far up in the air (see Plate XIII, upper picture), and some human beings must be made to appear menacing. Such effects are produced by tilting the camera upwards against the object, and—particularly where a comparatively small object is to be taken—holding it low on the ground at the same time. In many sporting events, too, such as long and high-jumps, the camera may be tipped upwards to silhouette the performer against the sky and to make him seem as large as possible in the picture.

The opposite effect results when the camera is tilted downwards. From a high view-point, such as a window in a church tower, everything below appears restrained, quiet, or humorous according to the circumstances—but always interesting. (See Plate XIII, lower picture.)

These effects are obtained, as noted above, by tilting the camera front upwards or downwards. Tilting sideways should be very seldom done, though it can on occasion give good effects. As an example, a person on skis travelling down a slope that is not very steep is never very imposing. But if the camera is tilted sideways in the opposite direction to the slope, the latter appears a great deal steeper and even a beginner on skis appears like a hardened racer. When this is done, no trees can be allowed in the picture, or anything else which would indicate that the camera was not held level during the shot.



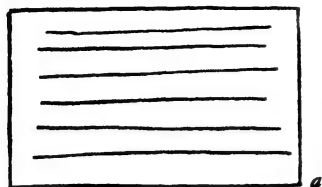
Fig. 12. "If the camera is tilted sideways . . . even a beginner on skis appears like a hardened racer."



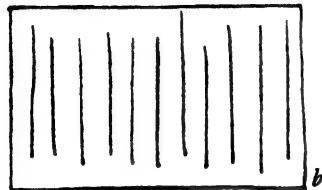
PLATE XIII. Camera angles.

Top : effect of the upwards tilted camera. Bottom : effect of the downwards tilted camera.

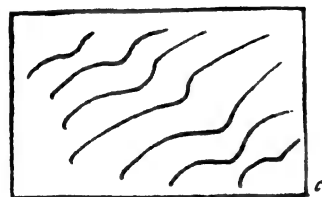
2. **The Composition of the Single Shot.** Though the camera angle helps to create an impression, the impression itself is largely caused by the composition of the single shot itself. Since composition can be divided under various rules, it is as well for the amateur to know them, so that he can create an effect when it is wanted. These rules are particularly important for shots of landscapes, towns, and buildings.



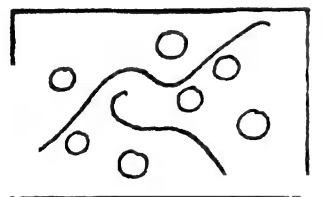
a



b



c



d

Fig. 13. Characteristic lines of various types of shot.

The *character* of the picture denotes whether it gives a serious or lively effect. Thus (Fig. 13):

- (a) Strong horizontal lines make the picture seem heavy, quiet, boxed-in, or (sometimes) 'massy.' (Temples, flights of steps, etc.)
- (b) Accentuation of vertical lines gives a feeling of festivity—but sometimes also one of pathos. (Churches, woods, etc.)
- (c) Strong diagonals bring an effect of liveliness, expanse, and movement. (Landscapes, particularly with open fields, waves on the sea, etc.)
- (d) Circular lines and scattered dots produce a silvery, 'happy,' fluttering impression. (Dots of light, clouds, human beings taken from above, etc.)

The *division of tone values* is another important matter. Large areas of light and shade, and in particular the relationship between areas of sky and earth (or sky and sea) shown, are cases in point. These areas must be divided in a definite and pleasing way. (See Plate XIV.)

*Perspective depth* can be produced differently as shown in Plate XV.

When all these points have been firmly impressed on the mind, the next thing is to choose the position of the camera which will best suit our purposes for a particular shot. For this purpose, a small frame cut out of wood or card is useful, with an opening 2 x 3 inches in size. This may be carried in the pocket, and when the world at large is examined through it, it is very simple and speedy to 'compose' the picture satisfactorily. Even though at first this appears to be a dreadful labour, a frequent examination of our surroundings through the frame should not be omitted, for not only will our films be greatly improved as a result, but the eye, too, will be schooled into recognising quickly what the camera will include from any one view-point.

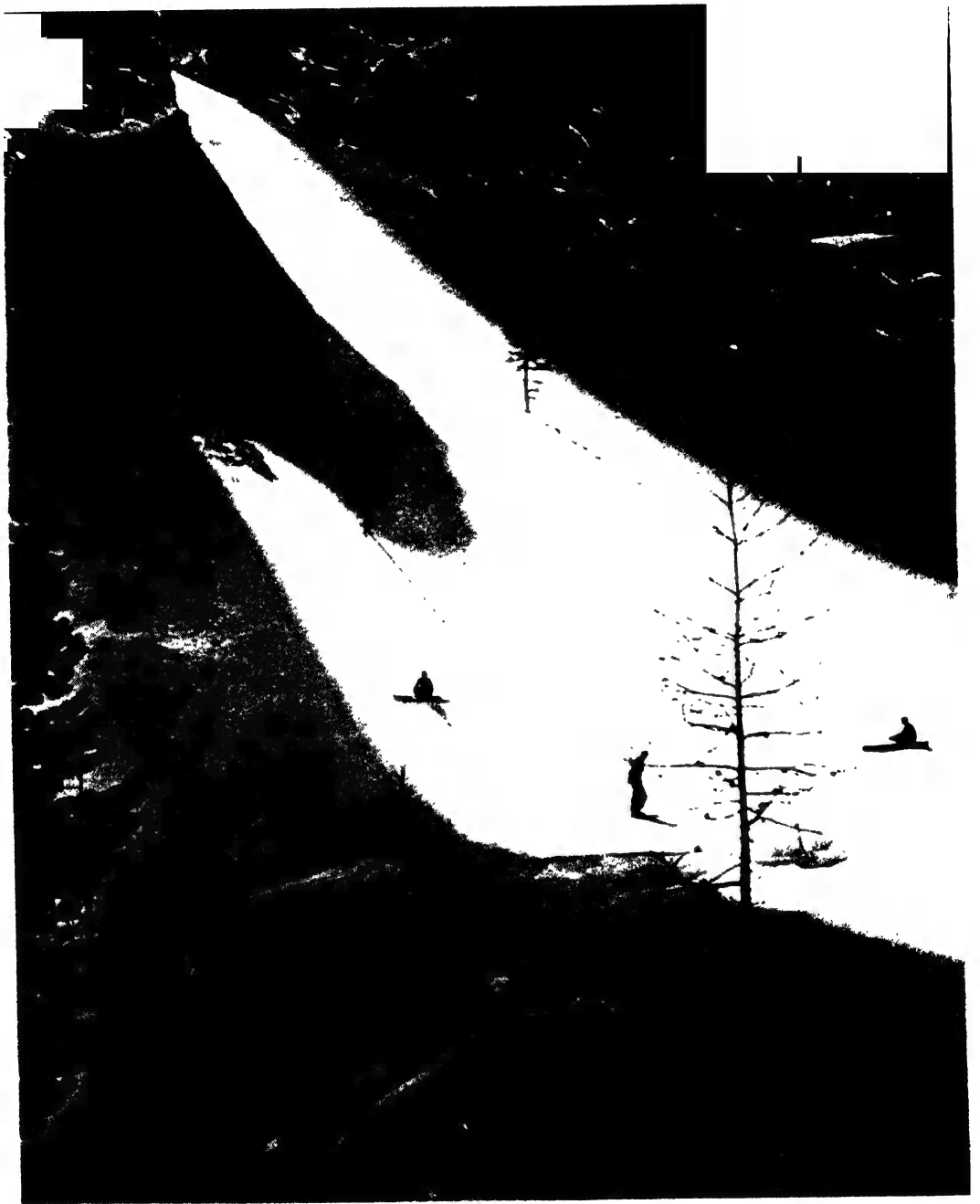


PLATE XIV. Composition.

Large areas of tone (e.g. light and shade) must be divided in a pleasing manner.



PLATE XV. Composition.



Effect of depth produced (above) by strongly accentuated foreground, (centre) by including a number of objects at different distances, and (below) by lines running through the picture to give strong perspective effect.

# 4. Subjects for the Amateur Film

## A. The Beginner's Film.

The scenes which the amateur will find repeatedly coming in front of his camera are those of persons, landscapes, and little scenes with brisk movement in them, such as crowds or traffic in the streets. The first experimental exposures made should thus be of subjects of this kind.

*Portraits.* The more naturally the model moves, the better. (See Plate XVI, upper picture.) Many people, and particularly children, are very stiff in front of the lens, and when this happens it is useful to 'shoot' them once or twice with the empty camera until they have got used to hearing it running. The lighting is very important indeed. In order to get some experience in this matter, the same subject should be placed in different positions relative to the sun, or the window or lamps when working indoors. It will soon be seen which kinds of lighting are satisfactory and which are poor. On no account should it be forgotten to lighten any dark shadows with a reflector (page 26) or to allow for the parallax in the view-finder at short ranges (page 14).

*Landscapes.* Good landscapes are not difficult to film well, provided that the rules of composition given in Chapter III are remembered. Winter landscapes, glaciers, and sea beaches should only be taken with side-light or back-light. Large areas of sky in the picture are usually only satisfactory when they are filled with clouds.

The whole scene can often be livened up remarkably by having someone or other in the foreground. But this arrangement should never be obvious, nor seem to be forced—the figures should form a composite whole with the landscape. (See Plate XVI, lower picture.)

*Scenes containing movement.* Here the question of depth of focus must first be decided. (See page 19.) Where it is possible to ascend some steps, or get to a position rather higher than the pavement level, this should always be done, for otherwise the people who walk just in front of the camera appear as nothing but blurred shadows. Attract as little attention as possible or a dozen people will stop and stare at the camera ! The old trick of holding the camera pointing in the wrong direction and then swinging it round when the people have all collected in front of the lens, is very handy on many occasions. (See Plate XVII.)



PLATES XVI and XVII.

THE BEGINNER'S FILM.



First step (*opposite*): Taking portraits.



Second step (*opposite*): Landscapes.



Third step (*this page*): Shooting crowds and moving objects. (Bank Holiday at Hampstead Heath, London.)



## B. Our Personal Surroundings.

The main interests of any film amateur will lie in his house, his garden, his family, and his friends. As soon, therefore, as the first trials mentioned in the last section have turned out satisfactorily, there is nothing to stop him making a short, but complete film around some family subject.

The most essential point though, once it has been decided to make a short film, is that it must have some central idea, or—to put it briefly—a *title*. It is reversing the process of filming to say to the children: “Come out into the garden, and we’ll do some filming.” This results in a number of unconnected film shots, but never produces a real film.

The right way to start making a film is to sit down any evening of the week in an easy chair with paper and pencil, and think over what can be filmed at the week-end if the weather is fine: the little habits of friends, the games the children play, and—generally—the life we live at week-ends. All these things will bring out ideas for films, which are noted down, and as soon as a fair number are on paper, it must be decided which of them can be filmed under present circumstances, and which are better left for a later occasion.

It is not necessary to make up a ‘script’ for every film, similar to the example on page 64, but it is always useful to write down a synopsis of the action which will serve as a guide during the actual filming. If this last is not done, one is liable in the heat of the moment to forget to film quite a number of very happy shots which should have been taken. The synopsis can be quite short, rather like the example given at the end of this section.

There are thousands of themes for films in the domestic circle. The remarkable range is indicated by the series of suggestions below, which, even if they are not fully worked out as synopses, show what an ever-changing variety of family subjects are at our disposal. These simple titles for family films mean little enough in themselves, for it is the imagination and sense of the humorous that is put into working them out which really makes the film. Each of the notes below can be handled in a good many amusing ways, and it is excellent exercise for the beginner to try to amplify each of them into a full synopsis.

*House and Garden.*

Where shall we hang Uncle Henry’s picture ?

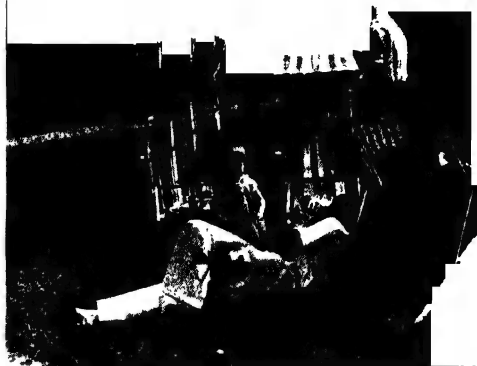


PLATE XVIII. Our Personal Surroundings. An hour with the youngest member of the family

A rubbish-heap turns into a flower-bed.  
The shrubbery through the seasons.  
Etc. etc.

*Children.*

The pie doesn't taste nice to-day.  
The Son and Heir builds a boat.  
Hide and Seek.  
Bonfires on Guy Fawkes Night.  
Etc. etc.

*Everyday Life.*

Off for the week-end.  
A Picnic at the Seaside.  
Visitors from abroad.  
Christmas Shopping.  
Etc. etc.

*Sport.*

To Epsom for the Derby.  
An Afternoon at the Golf Club.  
Our Son's first Cricket Match.  
Etc. etc.

*Household Pets.*

The Dog has a Bath.  
A Visit to the Zoo.  
Ellen and the Parrot.  
Etc. etc.

A synopsis for a film of this type might run as follows. (See Plate XVIII.)

*An Hour in the Youngster's Day.* Andrea wakes from her after-dinner nap—rubs her eyes (C)—frets impatiently while her clothes are being put on—rushes out into the garden—finds her elder sister, who is cleaning her bicycle—has the various parts explained to her (C)—tea is brought out on the grass—she is given her cup of milk—and a large lump of cake (C)—plays with her ball on the grass—shoots wicked fairies under her Mother's legs—and over her head—trips over her own feet in the process—starts yelling like mad (C)—declines to be comforted—and is rushed off pickaback into the house by nurse. (C=Close-up.)

With a short series of notes in this form, the shots can be taken with-

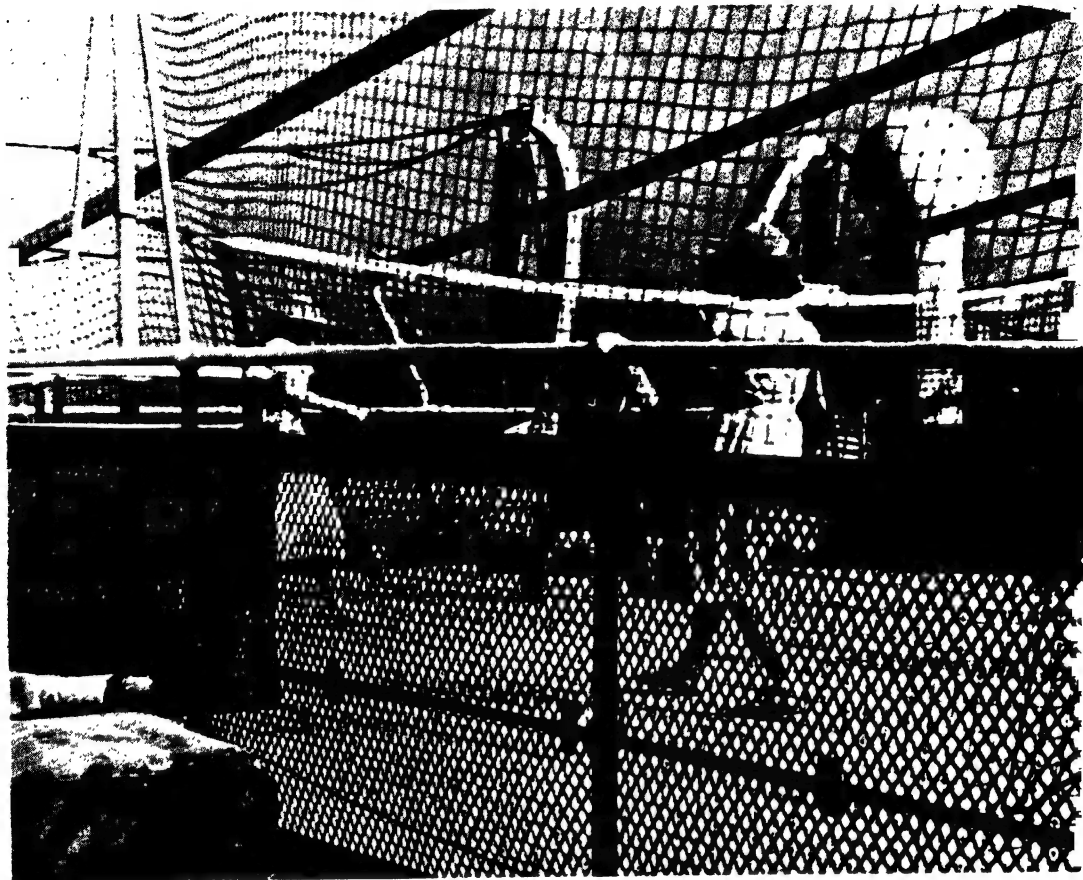


PLATE XIX. Films of Travel. On board a cruising liner.



out difficulty, and the ideas can be enlarged during the process, without making it difficult to assemble the shots and cut them later on.

### C. Travel Films.

Filming on holidays (or rest cures) is very similar to filming domestic subjects. As soon as the itinerary for the journey is settled, the most suitable parts of it for filming can be thought out at home, and the stock of film divided up so that a certain length is used in a definite place. The train can be filmed leaving the station at home, with the relations waving on the platform; the passing landscape can be shot through the windows of the carriage; or—where the journey is by car—the picnic meals, breakdowns, and other happenings *en route*. The greatest possibilities naturally arise at the end of the journey, whether it is a seaside resort with open-air baths, etc.; the mountains with their happy days in valleys, on peaks, or over glaciers; the English landscape itself through which a tour is being made; or—the finest field of all for the film camera—Winter Sports, with skis, skates, bobsleighs, ice-hockey, and the brilliant sun over them all. Cruises or sea voyages are in a class by themselves, since both the actual journey and the trips ashore offer great opportunities for filming. (See Plate XIX.)

The aim during journeys or holidays should not be to bring home as many short disconnected shots as possible, but to subordinate the shots taken to a definite planned theme, however short it may be. Thus, for example, in Port Said, hosts of hawkers, porters, money-changers, and conjurers flood the ship as soon as she has docked, and it is easy to fall into the trap of trying to record every type that presents itself. It is far better in such a case after shooting two or three scenes of the whole throng, in order to establish the atmosphere, to pick out some particularly characteristic 'type' which can be used to provide a theme for the film. The conjurer, who brings live rabbits from his nostrils, or plates full of water out of his pockets, must certainly be regarded as a subject for filming in himself.

This method of work has the further advantage that it is not necessary to race everywhere with the camera running, for it can often be left quietly at home. If a particularly satisfactory scene is noted on a voyage of discovery, it will usually be there for us the next day, so that the camera can be brought round specially to concentrate on the particular 'theme' in which it is the central figure.

## D. The 'Documentary.'

A film of a child being bathed, or one showing a friend's first attempts on skis in the Tyrol, is a record of fact, and thus a documentary film in a certain sense. The difference between such films and those we usually class under the heading of 'documentaries' is that in the former case the interest is purely a personal one, while in the latter the events filmed are of general interest. Further, the film records them in a more impersonal way since they are beyond our control.

There are two main classes of documentary films : the first class depicts actual events or actual scenery, and the second explains a particular process. The difference between them is wide, for while in the first class there is seldom any possibility or even necessity of making a detailed plan for the actual shooting, in the second class an elaborated script is nearly always a primary essential. There is a third type of documentary film which shows events or processes of a general nature within the frame of a personal 'story.' In this last class at least the 'story' must be planned carefully.

A few examples will help to clarify the above.

*Films depicting actual events.* The field for this class of film is enormously wide, and includes practically everything which takes place on land, and sea, or even in the air. Streets, the country, sports, the general life of the people, natural history; all of these, either at home or abroad, fall under the heading of actual events.

There is thus no shortage of subjects, but the broad range also shows why it is that planning is seldom possible in advance. The cameraman has no control over the subjects he films, and can only set up his camera on the subjects in front of him. Thus, in London, the Orators in Hyde Park or the Caledonian Market (See Plate XX) may form film themes, as is a cock-fight at Perpignan when one is travelling in the South of France, but it is only possible to decide what 'material' is available when one actually gets to the place where the events are happening. Moreover, unexpected happenings are always possible, and they cannot be anticipated. A little presence of mind and a set of steady nerves are thus valuable assets.

*Films which demonstrate particular processes.* This class of film is concerned with definite actions and movements which take a set time and are then concluded. The plan of campaign must be arranged so

that the filming can be completed before everything is over, or else the process reversed and the events adapted to the plan of the shooting. This can usually be done with sports, games, and other subjects which are to be shown for educational purposes. Natural historical and clinical films, which are by no means out of the question for amateur production, also belong to this category.

Sufficient preparation and a properly thought-out plan are clearly essential here, if we do not wish either to forget to shoot the most important scenes or to shoot them in a wrong way and to waste much material by taking superfluous ones.

*Documentaries with a personal 'story.'* The idea of combining the documentary approach to the film with some degree of personal treatment is often capable of giving extremely satisfying results, which are all the more appealing on account of the personal interest. Pictures taken purely impersonally at the Zoo may be interesting enough, and are often quite amusing, but it is infinitely more entertaining to include the reactions of one's children to the chimpanzees' tea party or to the feeding of the sea-lions. In such a case it is only necessary to change frequently from shots of the animals to shots of the children, and then back again to the animals.

Alternatively, a small story can be thought out which runs through the whole film like a coloured thread. As an example, on a visit to the Caledonian Market the family dog might get lost, and in the process of searching for him the film would show the stalls, people and the Market in general. Here again, it is only possible to work to a definite plan which has been made out beforehand, and which at least indicates the main lines of the story.

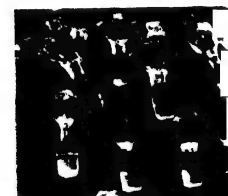


PLATE XX. The Documentary Film. A morning in the Caledonian Market, London.

## E. A Personal News-Reel.

Public occasions, which form the main field of the professional news-reel, are interesting also to the amateur to some extent. The Jubilee Celebrations of 1935 or the launching of the *Queen Mary* are cases in point, for their value as historical documents increases as the years go by and the real events are left farther behind. There is also something very satisfying in being able, after 10 or 20 years, to recall some of the important events of a particular epoch, or to show one's children the main events of the past in a truthful and lifelike manner. In all our filming, we are generally too apt to think of present interest, for in after-years the comment we hear to-day of "Why should we film *this*?" gives way to the sorrowful "Why didn't we film *that*?"

The events in which we ourselves had some personal part and special interest will naturally be those which please us most in later years, so that it is usually best not to film a pure record of events, but—as noted on page 32 regarding the skating contest—to fit the actual event into a short film with a 'personal touch.'

As regards the actual taking of such 'news-reels,' they are primarily distinguished from other documentary films by the fact that we cannot choose the best position for the camera or walk round to find the position giving the best lighting, for as a rule the camera is hemmed in with masses of people so that it must be used from the point at which it is. In such cases it is impossible to do without a long-focus lens if the faces and forms of the people in which we are interested are to be shown clearly on the screen. (See Plate XXI.) At the same time, it is useful to find out beforehand where the sun will be at the time of the ceremony, or to ascertain what illumination will be provided, and then to book a seat in the most suitable place on the stand that can be got. Without these precautions it is difficult to come home with satisfactory shots, and those who finally get to their places, and find that in spite of everything it is unlikely that good results will be obtained, are well advised to forget that they have a camera, and to use the film up on some other subject. Films of all public ceremonies of importance can usually be bought in substandard sizes later on.



PLATE XXI. The Personal News-Reel. R.A.F. Display at Hendon, England.

## F. The 'Pictorial' Film.

Every film should have its pictorial value, but there is a vast difference between the pictorial qualities of a film and the qualities of a 'pictorial' film. A few examples will make the difference clear.

Usually the title of a film refers either to the subject matter it contains (e.g., *Holidays in Somerset*, *Our Garden Party*, or *John and his Kite*), or—in the case of a photo-play—to the story it tells. But the title of a 'pictorial' film suggests an abstract visual theme, and the shots chosen have to match this theme by their visual appearance rather than by their actual content. A film *Lights and Shadows* has the obvious idea behind it of the play of light and shade in its multifarious aspects, and the shots for such a film must be sought out from such subjects as the dancing shafts of sunlight in a wood, dreamy corners in an antiquated town, silhouettes standing stark against the setting sun, and, especially, from the various attractive shadows thrown by moving persons and objects. Hundreds of shots can be found for a film with this title, and hundreds of films with different titles could be produced.

It is not always possible that films of this character can be made straight from a list of planned shots or according to a time-table, for much of the camera work may have to be taken as the occasion arises, and it might be several months before sufficient material could be collected for composing such films as :

*Castles in the Air.* A film about skies and clouds.

*A Strange Town.* The familiar sights and streets of London revealed in distorted reflection from shop-windows, the shiny parts of motor head-lamps, wet pavements after rain, or in ponds and puddles.

There are other films in this class, though, which could easily be shot in a single afternoon, or even in a couple of hours. Plate XXII gives an example of such a film, which we might call *The World from the Diving Board*.

Starting with a general view over the beach, the camera 'pans' downwards vertically to show the ground at the foot of the diving-board tower. The lens is then changed from standard focus to long-focus and we can pick out special groups of amusing or pictorially pleasing character. Directly below us a chat is going on, two men are climbing the steps towards us, and the shadows thus cast on the ground are most attractive, a group of children are playing in shallow water . . .

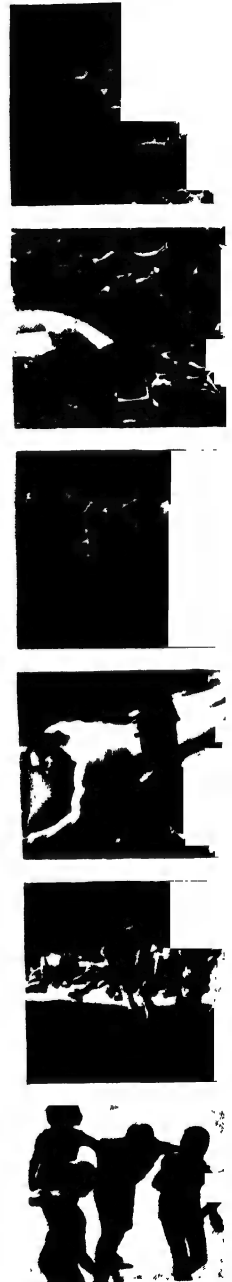


PLATE XXII. The Pictorial Film. *The World from the Diving Board.*



and thus we can go on shooting until the supply of suitable subjects is exhausted.

When assembled into a film, these shots would give the desired effect of a gay afternoon at a 'Lido,' but the angle at which all the shots were taken would give a much heightened pictorial effect, creating an impression of summer, sun, youth and joyfulness, quite independent of the actual subjects shown.

Here are two more examples of 'pictorial' films which could be made in a very short time.

*Foggy Night.* A parade of flashing advertising signs, lighted shop-windows, trams and buses, taken on a misty night and thus creating a picturesque and somewhat ghostly Babylon.

*The Roundabout.* Wooden animals and excited children dissolved into a circular movement which grows more and more pronounced and finally becomes an abstract impression of speed and giddyness.

The essential thing in all such films as these is that one should have a fixed and definite idea of what one wants to do before starting shooting, and that the cutting of the film should be done according to the rules of association and rhythm (see page 72). Thus the 'pictorial' film belongs to the group of films which must be taken in accordance with a preconceived idea. The actual shooting, though, is comparatively simple, and the effects are most attractive—a result that can never arise if the form and guiding idea of such a film is left to chance.

## G. Animated Films.

Everyone to-day knows Mickey Mouse, but comparatively few know how animated cartoons are really made. The principles involved are as follows :

First the background of a scene is drawn and laid on a horizontal glass plate over which the camera is suspended at such a distance that it just includes the drawing. This background appears stationary later on, on the screen. The actors are cut out in card or celluloid and their joints articulated, and then placed on a second piece of glass about 5 or 10 inches over the other. The figures are now in their correct position for the beginning of the film. The lamps are turned on (as a rule they are placed on each side of the bench, though at times they are also underneath to get a silhouette or 'half-tone' effect) and the first 'frame' of the film is exposed. About 12 to 15,000 exposures are needed for a short cartoon film, and after each exposure the figures are moved very slightly from the last position. According to whether the figures are to move slowly or rapidly on the screen the movement varies between 1-20th of an inch and  $\frac{1}{2}$  an inch between successive exposures. After each change of position, another exposure is made, and so on *ad infinitum*.

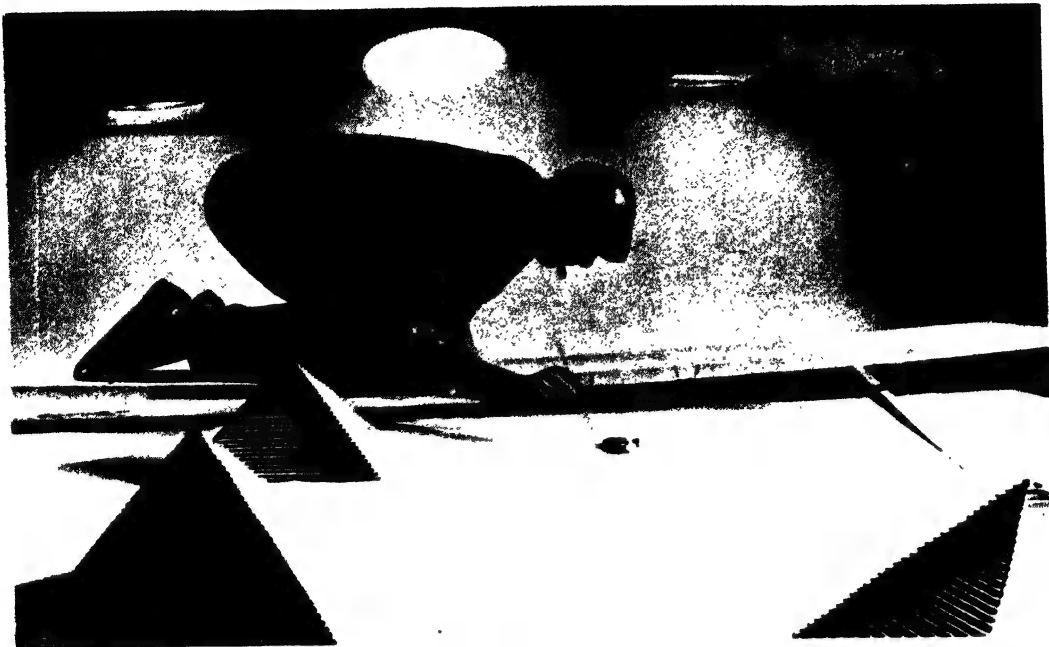
This explanation is, of course, reduced to the simplest form. The actual methods which are employed in producing Mickey Mouse films are extremely complicated, involving the most difficult combinations of cut-outs and drawings, and very often using no less than five 'layers' of celluloid, one on top of the other. Thus Walt Disney, the creator of Mickey Mouse, employs in his studios some two hundred people, but every amateur whose camera is capable of taking one picture at a time is in a position to make short animated films of all kinds, or to include a trick section in an ordinary film.

The following are some of the possibilities :

*Cut-out Figures.* Those with some talent for drawing can cut out amusing figures and move them about as described above. The necessary camera bench can be made at home without great cost. The primary points are stability of the drawings, cut-outs, and camera carrier. After the first trials the various ideas of the game will be seen, and all sorts of tricks will result. There is unfortunately no space here to describe them in detail, but it might at least be mentioned that a



PLATE XXIII. Animated Films. Above: the 'set-up' for a model film. Below: the scene as seen by the camera. (From the film *A Trip to the Country*, produced by the author.)



XXIV. Animated Films. Above: a car is moved across the desert. (From *The Birth of the Robot*. Direction: Len Lye; Colour camera: Alex Strasser. Courtesy of Gasparcolor, Ltd. and Shell-Mex Ltd.) Below: Lotte Reiniger at work on the silhouette film *Dr. Doolittle*. (Courtesy of Comenius-Film.)

moving background can be made by drawing a landscape (or, for quicker movement, blurred outlines of trees and telegraph poles) on a long roll of paper, and pulling it, little by little for each exposure, past the field covered by the camera.

*Animated Drawings.* Those who can draw well can make figures appear little by little on a piece of paper by the process of drawing the lines in small sections, and adding a little after an exposure has been made. As a rule about a quarter or half an inch should be added each time. The resulting figures can then be cut out and used for the 'cut-out' type of film above. Moving diagrams for technical and scientific films can quite simply be made in this way.

*Silhouette Films.* Those who like strong blacks and whites can cut out figures in black paper and photograph them against a white background, the latter preferably illuminated from the back. Lotte Reiniger has made many remarkable films of this type. (See Plate XXIV, lower picture.)

*Model Films.* In this class of animated film, dolls or puppets are used instead of cut-outs or drawings. They are placed on a table with background and side-scenes, and then filmed with the camera on a firm tripod, one picture being exposed after the other as described above. (See Plates XXIII and XXIV, upper picture.) The question of moving the puppets is not difficult if they have articulated joints which can be fixed firmly in any one position. The process of walking, though, should be avoided as a rule, since this movement commonly appears uneven and jerky on the screen and causes an unpleasant effect. On the other hand, anything that rotates is very simple to take in this way (spinning-tops, cars, railways, or anything on wheels). The illumination is sometimes difficult. These small 'sets' must be effectively lighted, just as much as a full-sized one, and it is best to use a number of lamps distributed round the table and arranged so that the whole set is not entirely flooded out with brilliant light. As an effect lamp the film projector can be used, for its lens makes it, as it is, a miniature spot-light.

## H. Photo-Plays.

Anyone who wants to enter this field should have—apart from sufficient financial means—the following attributes :

1. A good idea or story for the film.
2. Time and patience enough to work out the idea or story into a script ready for shooting.
3. Friends who can be co-opted as actors in parts which suit them reasonably well.
4. Some ability to direct these actors.
5. Sufficient experience with the camera to be able to solve all the technical problems which will arise during the shooting.

These five attributes are such that they are seldom found in a single person, though comparatively frequently in a group of friends. A photo-play, in fact, requires a team to produce it, and the members of the team must be well matched.

Regarding the five essential points above, the following may be said by way of detail :

1. An idea or story is suitable for amateur filming if it can be produced with the simple equipment owned by amateurs, and if it contains movement, humour, and climax without making any great demands on the capabilities of the actors and cameraman. It is far better to make up a story to suit the existing actors than to find actors for a ready-made story. As a rule, the last is an easy way of getting into difficulties.

2. When the story or idea has been produced, the script for the film must be written. This is done in steps : each situation in the story is taken separately and worked out—including as many new ideas as possible for its development—into a separate film sequence. These sequences form together a synopsis of the film, which can then be fully worked out and turned into a shooting-script.

In the script the shots must be put down separately, one after the other, in the order in which they will finally appear on the screen. They are numbered consecutively and marked " Longshot," " Mid-shot " or " Close-up." Finally, their length is indicated. This careful division is very necessary, for it is only when this is done that the movement and form of the film can be pictured beforehand in the mind. Timing is a highly important matter. If it is not taken into account, three times the actual material necessary will probably be shot. The length

of a shot depends on the action it shows. Each scene, therefore, should be gone through in the mind's eye and timed with a watch, though certain shots in which no definite action is shown need only be left long enough on the screen for the audience to realise exactly its meaning. Long-shots should be longer than close-ups, since the latter show the objects much larger and more clearly. The minimum shot lengths are—in general—about 5 to 6 seconds for a long-shot, 3 to 4 seconds for a mid-shot, and 1 or 2 seconds for a close-up.

The following example demonstrates the way that a script is worked out. The synopsis states :

“ After shopping is over, William takes Helen to the station, where she only just catches her train.”

This small section would expand to something like the following :

(L = long-shot. M = mid-shot. C = Close-up.)

Scene X. A platform in Victoria Station.

*Shot 21. L. (8 seconds).* The train stands ready to go, with the usual pothor of passengers, porters, luggage barrows, and refreshment trolleys.

*Shot 22. M. (5 seconds).* As shot 21.

(These two shots give the ‘ background ’ atmosphere for the coming scene.)

*Shot 23. C. (3 seconds).* The guard signals passengers aboard.

*Shot 24. L. (8 seconds).* General movement in the direction of the train on the platform.

*Shot 25. M. (20 seconds).* A taxi drives up at the entrance to the station, Helen and William leaping out before it has properly pulled up. Helen is laden with parcels and rushes at once into the station. William throws a coin to the driver, grabs two bags and several more parcels, and dashes after her.

*Shot 26. M. (5 seconds).* Both of them running through the barrier.

*Shot 27. L. (14 seconds).* They both come racing down the platform.

*Shot 28. M. (8 seconds).* They reach the last carriage and Helen tears open a door to a compartment to get inside.

**PLATE XXV. The Photo-Play.**

Still photographs from amateur productions. Top and centre Wimbledon Ciné Club. Bottom : Bognor Regis Film Society.



- Shot 29. C. (6 seconds).* Her parcels jam in the door-frame. The hand of a porter appears, shoves her inside, and slams the door behind her.
- Shot 30. C. (8 seconds).* The engine whistles and blows off a lot of steam, then starts moving.
- Shot 31. M. & L. (12 seconds).* The train moves out, William running alongside it and handing through the window to Helen the two bags and some of the parcels.
- Shot 32. M. (7 seconds).* William with the last two parcels in his hand, runs past the book-trolley, and snatches the first magazine he can get his hands on.
- Shot 33. L. (5 seconds).* He runs after the train again and throws the magazine to Helen. She catches it, but he drops the two parcels.
- Shot 34. C. (6 seconds).* He picks them up again as quickly as he can.
- Shot 35. L. (4 seconds).* The train is now moving quite quickly. He runs after it once more.
- Shot 36. M. (15 seconds).* He throws one of the parcels to her. She catches it, but he throws the second too high, and it lands on the roof of the carriage, where it sticks.
- Shot 37. L. (20 seconds).* The end of the platform. The train, disappearing round a bend, the parcel still on the roof. The camera moves round to show William waving after it.

This scene was made up specially to show that a simple and harmless-looking little part of the synopsis can be quite a difficult thing to shoot where something interesting or amusing is wanted. These particular shots could naturally not be taken with a single camera, so that two or three cameramen would be necessary. At the same time, some scenes will certainly need to be repeated to get all the shots as they should be. All these questions must be clearly thought out and set down on paper, and that is why a fully worked-out script is necessary for a photo-play.

When the script is ready, all the scenes which take place at one particular place are marked with coloured pencils, for the shots are not

PLATE XXVI. The Photo-Play.



Work photographs showing the  
taking of amateur films. All  
from the West Essex Film Society



actually filmed in their real order, but all those in one setting are done at once for convenience. For other reasons, it may be necessary to shoot the end of the film first and the beginning later.

Finally, against each scene in the script should be written the 'properties' required, so that they can be checked over to make sure they are all at hand. After this, the script can be called 'ready' for shooting.

3. The actors will naturally need to have read the script several times through at least, so that they will know what is required from them and how they must behave when the time comes for filming. As we noted above, shots are often taken quite out of their sequence in the film, yet in spite of this the continuity of the action and gestures of the actors must be unbroken. A few talks between the 'director' and the 'actors' will thus be essential to clear up little difficulties about the action, movements, or other points noted in the script itself.

4. The work of the amateur director is primarily that of watching the action of the players, in order to avoid difficulties in continuity which may result from the practice of taking shots out of sequence. A short run through before the filming is actually started is usually enough to ensure this. An important thing is that as little 'acting' as possible should be shown, the characters moving as naturally through their parts as possible. The director must also attend to external matters, in the sense of making sure that they have the right clothes on and are carrying the proper things in their hands. If this is not attended to, the most surprising things can happen: a lady can get into a car in a light-coloured sports suit and get out of it in a dark-coloured evening dress. The last matter of importance is to take sufficient close-ups which have no special action in them, but which can be used if necessary later on to save the necessity for a 're-take' should something go badly wrong in the shooting.

5. Good photography is extremely important if a photo-play is to be effective on the screen. It is thus best not to ask too much from the camera, otherwise there may be all kinds of troubles and unpleasantnesses with the quality of the pictures. Exterior work in daylight is much the simplest way of shooting, and can be extremely satisfactory (see Plate XXV), though bad weather can play havoc with the schedule. Interiors in artificial light are not dependent on the weather, but much more difficult, particularly if the lights available are rather scanty.

This can be helped out by using mid-shots and close-ups as much as possible, since these are certainly more effective than badly lit long-shots. (See Plate XXVI.)

The composition and lighting of each shot should be thought out in accordance with the rules outlined in Chapter III, for it is frequently necessary that the shots have a certain mood and character to match those before and after them.

The length of a photo-play is a thing that is very difficult to decide in a general way. Those who have the time and means can make a film in six acts, but this film will not necessarily be better than one that lasts five minutes on the screen. The question is best left to the producer to determine according to the circumstances involved and the personal tastes and capabilities of those taking part.

## I. Colour Films.

There is no question that in many cases colour is much more effective than the ordinary black-and-white, and even to-day there are certain countries where amateur colour films seem to outnumber the black-and-white ones. We can thus see that the popularity of colour is growing.

The technical points of colour film are not very different from those of monochrome photography. The latest colour films, such as Kodachrome and Dufaycolor, require no filter either on the camera or projector, or at the most need special camera 'correction' filters under particular circumstances. The use of these filters depends on the light ruling, and the filters themselves are adjusted to the film emulsions, just as the emulsions are arranged to be correct for different light conditions. All makers of colour films give special instructions regarding their films and filters, and these instructions should be followed explicitly, or the results may not be satisfactory.

For all colour films, the following basic rules are true :

In contradistinction to monochrome films, front light should be used as far as possible during exposure, since the colours themselves give sufficient contrast.

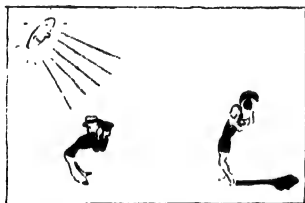


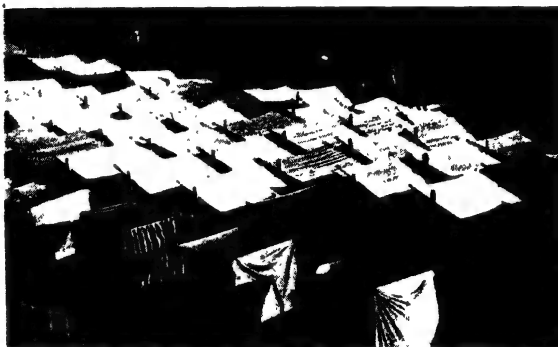
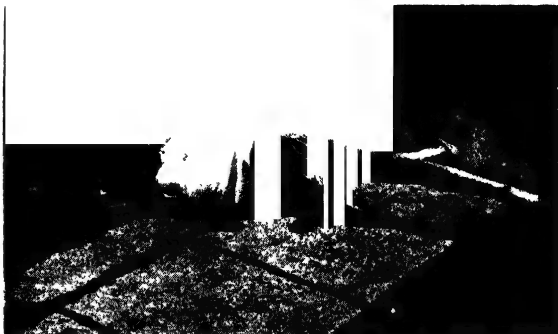
Fig. 14. Front light should be used as far as possible.

Correct exposure is *essential*, for the latitude in exposure of colour film is much less than that of monochrome. In general, a larger aperture is needed for colour than for ordinary film, so that the special tables for apertures given by the film manufacturers should be used exclusively. In this connection reference to the new High-Light exposure method mentioned on page 14 may be made.

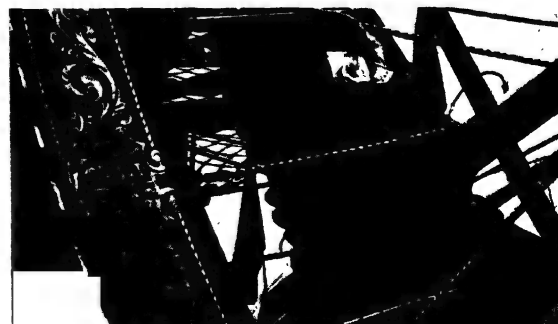
All colour films should be sent back for processing as soon as possible after they have been exposed. If this is not possible, they should be kept as cool as possible—even in a refrigerator—if the weather is very hot.

It should be mentioned, in conclusion, that colour films are not yet available for all the amateur film sizes. Any dealer will give information of the makes available, or when new sizes may be expected on the market.

**PLATE XXVII. Colour Films.**



Children with toys, beach scenes, travel scenes in summer and winter, circus, zoo and fun-fair scenes and all kinds of trick and model films are favourite subjects for colour filming.



# 5. When the Shooting is Over

## A. Cutting.

We saw earlier on that the 'reality' of the film was produced by the rapid change of scene, and that this change of scene is provided for in the shooting-script. The results of the camera work thus show real life in a greatly condensed form, and the final problem of the film maker is to synthesise these condensed extracts into a form which makes the audience believe that they are seeing something 'real.' This can only be done by putting the film together in a special and perfectly definite way, and this work is referred to as 'cutting.' Good film cutting is a high form of art, and the cutting is consequently one of the most important sections of work in film making: so important that quite a number of books have been written on cutting alone. Here, only the most important things can be mentioned.

Cutting really includes two separate fields of work, the first being the creation of effect (thus called creative cutting) and the second being the preservation of continuity throughout the film (continuity cutting). Both fields, however, dovetail into each other in actual practice.

1. Creative Cutting. The work of cutting starts by collecting all the reels of film which have come back from the processing plant and cutting them up into single shots, so that each shot lies separately on the shelf. These single shots are then spliced together in the correct order as shown in the script, and the film run through the projector. It will at once be evident that in many cases the order of the shots in the script or synopsis is nothing like as good as it could be. There will be shots which cannot possibly be put next to each other (perhaps because one is very bright and the other extremely dark) and which must be separated by putting a third shot between them. In other cases it will be clear that two shots are made to be next to each other, though they are at present separated. Assuming that no harm is done to the clarity of the film, these changes are made. (See Plate XXVIII.)

Soon it will be realised that it is *not* immaterial at what point a shot begins and at what point in the action it ends. If two shots in a market show the same process, for example, of two stall-holders handing paper bags to their customers, it seems at first that both shots should run



**PLATE XXVIII. The Sequence of Shots.** In many cases it is not expedient to put the shots in chronological order. When showing a group of people on a ski-run, it is only essential to have the first and last shots correctly placed chronologically, while the other shots can be placed in the film in such a way that they follow each other most effectively.



their full length on the screen. Since, however, the effect may be tedious, it is far better to use the first half of the first shot and the latter half of the second, stopping the first at the point where the stall-holder has put the bag into the customer's hand and starting the second at the same point. Thus the time taken to run the shots through is halved, and there is no question of misunderstanding what has happened in either shot. With a little imagination and experience it is not very difficult to find ways of joining two shots. The main point, of course, is that there must be some visual or 'associative' connection between the single shots, and that, at the same time, the movement forward of the film on its appointed path will not be impeded but actually helped.

The length of time the various shots are on the screen is also of great importance, as also is the frequency with which the shots change from one to the other. In a broadly conceived landscape film the shots can remain a comparatively long time on the screen, for a slow and quiet effect is desirable there. But in a slapstick comedy the shots can hardly be cut to follow each other fast enough, for the action must be so rapid that the audience is run off its feet. Every film has its own requirements, and as a general rule one may say that dramatic or rapidly moving parts of the film should have short-cut shots, while the quieter passages should show slower shot changes and move evenly forward. When the action of the film is approaching one of the 'high-spots' of the story, the shots may be progressively shortened to lead up to the climax.

2. **Cutting for Continuity.** Throughout all this work it must never be forgotten that mere external appearances are important—that when changing from mid-shots to close-ups and vice versa the people shown must be in the same position in each shot. (See Plate XXIX.) If a man is looking up at the sky in one shot, he cannot be allowed to be gazing at the ground in the next, while if four people are talking together in shot one, two of them ought not to vanish when shot two appears. If mistakes of this kind are found on running through the film, the spare close-ups which have been taken during the shooting (see page 34) are of great service. By placing one of them between the two other shots, the error can very often be entirely corrected.

By continuous alterations of this kind, and by continually running through the film to observe the effect, each sequence will gradually assume the appearance of an organic whole, and the only thing left is to join together the sequences themselves to form the completed film.

PLATE XXIX. Continuity.



One and the same subject taken from different distances and positions must not change in content between the shots. Thus, in the upper shot here, the girls in the inner ring are standing up, and they must be also shown standing in the shot which follows this one. It would be wrong to cut from the upper shot to the lower shot direct, since in the latter it is the outer ring of girls who are standing up.



## B. 'Punctuating' the Film.

The connecting-up of the different film sequences can be done, quite apart from the use of titles, in the greatest variety of ways.

Fading-in and fading-out is a device primarily used to end or start an 'act' of the film, or—when placed between two scenes—to show that a new section of the film is about to begin. The 'mix' shows one scene dissolving into the next, and thus draws the two tightly together.

The newest type of punctuation is the 'wipe' (see Plate XXX) and is shown in the cinemas in the most varied forms. Professional film-makers are fortunate in being able to secure all these effects without difficulty on negative-positive film with the optical printer.

Fades are usually made in the amateur camera by starting with the lens aperture as small as possible to begin with, and then getting a friend to open it to the correct aperture for good exposure after the camera has been started. This causes a fade-in, and a fade-out is made in the reverse way. The resulting effect, however, is not so attractive as the 'shutter fade' of the professional. Another simple method of producing a fade (though it looks more like a wipe on the screen) is to get a friend with a dark suit to stand in front of the lens about three or four feet away, and then to move sideways out of the picture after the camera has started. The fade-out is done by reversing the process.

Mixes require first of all a fade-out. Then the camera is taken into the dark-room, or placed in a changing bag, and the film turned back to the point where the fade was started. After this the camera is trained on the next scene and a fade-in made in the usual way. The two fades then produce a mix.

True wipes can only be made by a highly complicated process, which is far too expensive for the ordinary use of the amateur. It may be expected, though, that substandard optical printers will shortly be at hand, so that this type of scenic punctuation may be available before long. Amateurs should then use it frequently, since there is no doubt that its effect can at times be highly diverting, as shown in the example.

Such effects will, of course, only be available from a special laboratory, just as with the professional film, but this is no real disadvantage. Fades and mixes can already be produced to order by many processing firms, and this helps the amateur to concentrate on more important things than complex technicalities.

PLATE XXX. A 'Wipe.'



The new scene pushes away the old one by appearing in the centre of the screen, gradually becoming larger and larger, until it replaces the scene before.



## C. Titles.

All titles should be short and concise, and should look as attractive as possible. The most commonly used titles (i.e., those printed to order by processing firms) are as a rule anything but attractive.

Personally made titles are necessary if their effect is to coincide with that of the film, and everyone should be able to write the title nicely with chalk on a black card. A drawing can also be included with the text to liven the title, and when complete the card may either be hung on the wall for filming, or else used in a titler.

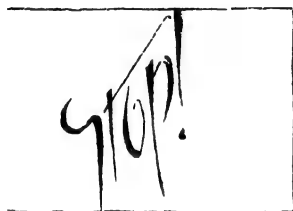
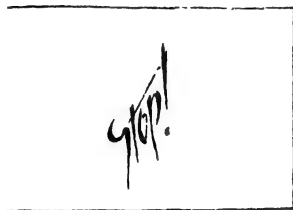


Fig. 15.

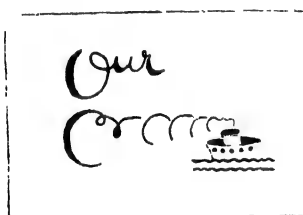


Fig. 16.

The main title, at the beginning of the film, should be the most attractive, while subtitles and 'spoken' titles should at least show a small 'vignette' to prevent them looking too dry.

Quite a happy way of starting a film is to use a 'natural' title in the shape of a sign-board, placard, or road sign, for something of this sort will almost always be available. (See Plate XXXI, upper picture.) But if nothing whatever can be found, it is a good idea to write the title obliquely across a suitable photograph. Care must, of course, be taken to ensure that the words stand out clearly from the pictorial background. (See Plate XXXI, lower picture.)

A useful way of representing cries, shouts, or signals (S.O.S.) is to show the words small at first, then changing immediately to a large size. This is done by taking the shot of the title from some distance and then bringing the camera near and taking it a second time.

Titles which write themselves are also extremely effective on occasion, though a trick bench (see page 59) is necessary to make them. Each little bit of the text is gradually added, and



PLATE XXXI. Titles. Upper picture: A 'natural' title for a film called *The Inn on the Mountain Pass*. Lower picture: A 'background' title.

the camera exposes one frame at a time, as in all trick work of this nature.

Any amateur can think out and devise for himself new ways of making titles to suit his own tastes and the films he makes. The more amusing they appear, the shorter their text, and the more sparingly they are used altogether, the better.

Every title should only be left on the screen long enough for it to be read. A single line is usually reckoned to take two seconds to read.

#### **D. Projection.**

When the final stages of film production are over, and the day draws near when the masterpiece is to be shown for the first time to a circle of family and friends, it is only natural that the most hardened optimist should feel a little anxious. Will everything be all right ?

All this depends entirely on the precautions taken by the amateur himself. For good projection everything must run smoothly, and a little attention is required to ensure that it does so.

First the projector is cleaned of the dust it has accumulated, the gate in particular being brushed out and polished with a piece of soft leather. Then the films to be shown are run through the projector to make sure that the splices hold and that the perforations are not damaged so that they stick in the gate. To conclude, all the oil holes are given a few drops of oil, and the projector is ready.

Precautions are taken against possible accidents by having beside the projector a table with a rewind, film splicer and cement, scissors, screw-driver, pliers, and spare fuse wire. With this equipment, anything short of a complete breakdown can be rapidly dealt with.

The seats should be arranged so that everyone can see the screen properly and nobody should break his neck to look at it. The screen must be examined to see that it is tightly stretched and has no creases, and—finally—one or two films should be hired from a library to make up the 'show' into a complete performance.

The greatest asset in making films is that we can reckon on an audience which is always ready to see our work. The more critical the amateur is in making his films, the better will they be, and the audiences will become more and more appreciative and more and more ready to watch the screen. The conclusion to be deducted from this fact will certainly be obvious to every amateur.



















